# Turnkey Radio
# On Air Studio

The Turnkey Radio is a comprehensive “On Air Studio” design by Axel Technology to integrate all the essential equipment for a Radio Station to have the best ratio between quality, functionality and economical investment.

The Turnkey Radio is a cost effective solution perfect for any kind of station: FM, AM, WEB, etc., all integrated into a compact technical furniture, pre-assembled and wired by Axel Technology.

## SCOPE

The goal is to provide broadcasters with a complete “plug and play” solution ready to go On Air.

Here we describe a complete entry level ON AIR STUDIO, where any single component has been selected to offer the best functionality/price ratio, according to the following fundamental point:

- Cost effective budget
- Complete solution
- Easy of use
- Easy maintenance
- Scalability

## TRANSMISSION & RADIO TYPE

The solution is suitable for:

- FM, AM, Satellite and WEB radio station
- Community radios
- P.A. (Public Addressing)

## PROGRAMS TYPE

The solution is suitable for:

- Automatic and/or manual programs
- Live programs with speakers (talk show)
- Radio with Control Room and studio (speaker booth)
- Radio with technician and speaker sharing the same room

## EQUIPMENT

On Air Radio Studio is composed by the following equipment:

- Technical furniture with 19 units rack
- Audio console with
  3 mic inputs
  3 stereo inputs
  2 telephone hybrid
  1 GSM gateway
- On Air workstation with audio card
- Radio Automation Software
- 24/7 Logging and WEB Streaming unit (optional)
- Digital Audio Processor with RDS and Stereo MPX encoder
- 2 microphones with stand and anglepose
- 2 headset
- CD/MP3 Player
- FM Tuner with RDS
- Cables and connectors

## FURNITURE

The furniture size is 275x100 cm that allows 2/3 operators (technician, speaker and guest) to work together.
It includes the 19 units 19” rack to fit all the necessary rackmount equipment, cable tray and mechanical accessories.
This allows the assembling and the test of the system at Axel Technology labs, to deliver a 100% working solution that can be easily installed in less than 4 hours following the attached instructions.

## RADIO AUTOMATION

Soundtrack Studio radio automation provides tools for On Air and production:

- Playout and IP Streaming
- Live assist hotkeys for instant replay
- Time announcement
- Automatic playout of ADV
- Recording
- Import of audio files from LAN and editing software
- Musical scheduling
- Playlist WEB viewer for talents, speakers and guest

The number of workstation running Soundtrack Studio radio automation can be increased to achieve different system configurations. A production workstation can replace the on air workstation for emergency playout in case of fault.

## PLAYLIST / COMMERCIAL

Soundtrack Studio features simple and powerful tools to create the playlist (both manually and automatically), that allows the playout to run continuously even when there is no operator (night time or holidays) or nothing has been scheduled.
The scheduling and playout of commercial is always guarantee to secure the revenue from advertisement.

Main features:

- Automatic and manual music playlist generation
- Automatic selection of music according to user-defined rules
- ADV are automatically scheduled (according to contract duration)
- ADV cannot be skipped by the operator
- ADV certification (report)

## WORKSTATION, STORAGE & HARD DISK

The workstation is based on Windows 7 Embedded version; the OS is installed on SSD (solid state drive), with a recovery partition. The audio cards features 2 stereo inputs and 2 stereo outputs to manage all the functionality provided the Soundtrack Studio radio automation software.

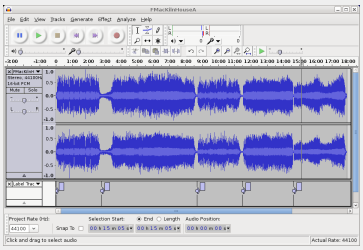
The storage for audio files, commercial, jingles, databases and scheduling can be “local” on the On Air workstation or attach to dedicated server/workstation connected on the network.
The storage can be copy on other workstation or configured with redundancies (RAID) in order to guarantee the safety of the data in case of fault.

All data is stored on Hard Disks, which are the real loose link of the system, being the only mechanical elements.
We choose Seagate Constellation series. This disk is certified for 24/7 operations and Axel has been delivering this model and its predecessors for many years, with very good statistical reliability.

## NETWORK - CONNECTIVITY TO CLIENTS (optional)

Distribution of streams to clients can be achieved in ordinary LAN architecture, with or without a dedicated server.
Any gigabit network unmanaged switch can be used to connect the system to other clients
ANTIVIRUS (Avira or Sophos) is warmly suggested.

## AUDIO EDITING



The system can be integrated with any audio editing software (Adobe Audition, Wavelab, etc.) running on PC connected on the network, some editor is free on Internet (f.i.: Audacity).
Audio file are imported from CD, Flash Drive, network and also from existing library like iTunes.

## BROADCAST CONSOLE

The broadcast console Oxygen 3 is a compact unit that combines all the essential functionality:

- 3 micro inputs
- 9 stereo inputs
- 2 telephone hybrids.
- On Air lamp control.
- Monitor loudspeaker cut-off when microphone is on.
- Talk-Over facility: automatic attenuation of background audio while speech

## TELEPHONE HYBRIDS (POTS/GSM)

The telephone hybrid is essential for live programs with audience live intervention and interviews.
The line can be POTS or GSM (SIM card); a GSM gateway allows the audience to call also mobile number.
The solution provides 2 telephone hybrids that allow receiving and managing 2 incoming calls and putting them on air independently or in conference.
Oxygen 3 console integrates the hybrids and allows the control of audio levels (send/receive).

## AUDIO PROCESSOR & RDS ENCODER

FALCON 3i is a 4 band digital Audio Processor, Stereo Generator and RDS Encoder all in one, designed for FM, WEB and Satellite transmission.

Main features are:

- Guarantees reliability and steadiness in modulation.
- Brilliance Control
- AGC: Automatic Gain Control assures the right and constant output level, avoiding the jump of level between different programs or audio sources.
- SPEECH DETECTOR: adjust the processing according to the nature of the audio, detecting music and speech
- Generate RDS data (if available)
- Delivers extremely accurate MPX signal to the TX modulator.

## 24/7 AUDIO LOGGING & STREAMING (optional)

Logging is the 24/7 non-stop audio recording of main program output, which today is extremely important for multiple purposes:

- Law obligations
- Customer advertisement certification (time stamp)
- Real time monitoring of radio programs
- Audio quality surveillance
- Streaming over Internet
- Competitor surveillance

DML AUDIO logging software allows long term archiving, browsing and export/conversion of recorded contents.

DML AUDIO can be configured to record audio feeds from the widest range of sources (RF, antenna, decoder, streaming, stereo line, etc.) and store them on hard disk.

DML AUDIO automatically overwrites oldest recordings with the new one. Usually recording remains available 30/60/90 days as per law requirements in many countries.

DML AUDIO also notifies alarms in case there is no audio source.

## COMPLEMENTARY EQUIPMENT

The following equipment are included in the studio:

- CD/MP3 Player
- TUNER
- 2 Microphones with table stand and anglepose
- headphone distributor
- 2 headphones
- Pair of loudspeaker

## REDUNDANCIES

The system is fully scalable and customizable to match the needs of each broadcaster, in any case one of the main aspect are the redundancies, that allows the system to keep running in case of fault:

- Data backup: automatic or manual copies of the archive/storage
- Redundancies: emergency on air workstation

Antivirus and UPS are extremely recommended.

## SYSTEM INTEGRATION SERVICES

The system is delivered to be easily installed and maintained also by not skilled technicians. For this reason Axel Technology provides also:

- System pre-assembling and wiring at Axel Technology premises
- System project, technical drawings and manual

## SERVICES (optional)

If required Axel Technology also provides the following services:

- System installation
- On site system test and commissioning
- On site training for operators
- Baby-sitting during system start-up

## POST SALE SERVICES (optional)

If required Axel Technology also provides the following post sale services:

- 1 year post sale support
- 1 year software maintenance and update

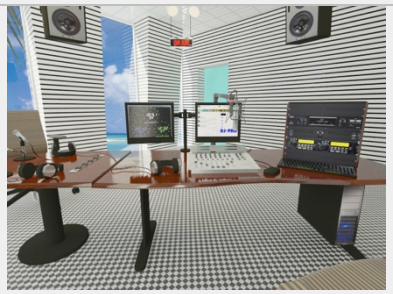
## CONFIGURATIONS

Configurations with different console:

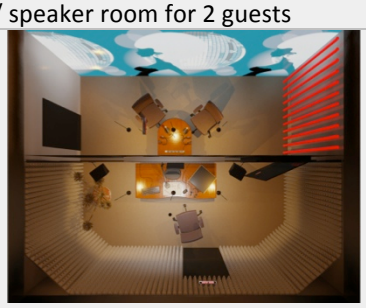
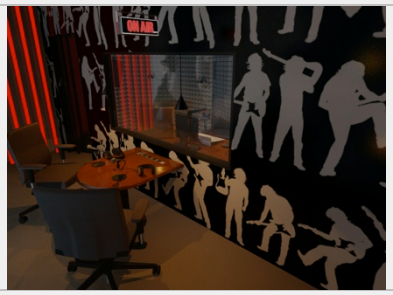
| | | |
|---|---|---|
| | | |
| Oxygen 3 | Oxygen 4 VMH | Oxygen 4 Digital |

## STUDIO LAYOUTS

Layout 1 - On Air Control room and speaker in the same studio

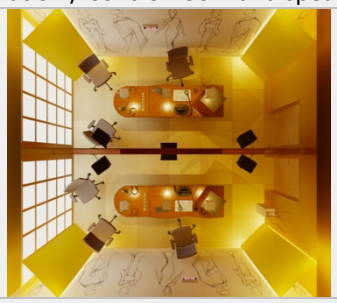
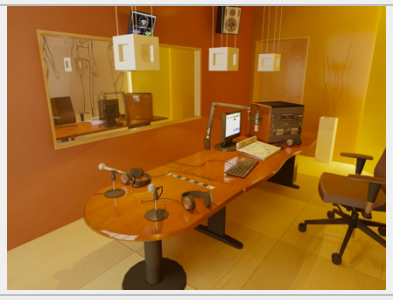


Layout 2 – On Air Control room with Oxygen 3 / speaker room for 2 guests

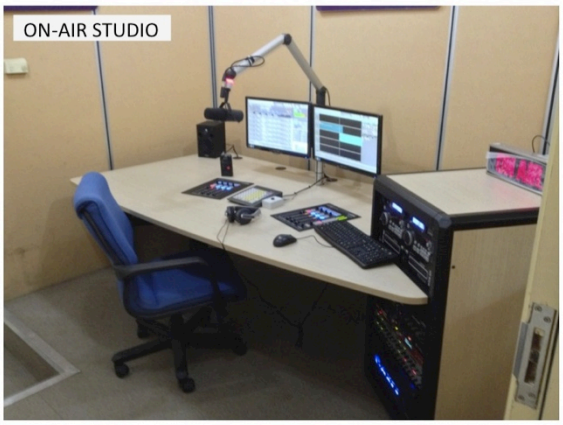
Layout 3 – On Air Control room with Oxygen 4 VMH / speaker room for 6 guests

Layout 4 – On Air and Production in twin configuration / Control room and speaker in the same studio

## INSTALLATION

ON-AIR STUDIO

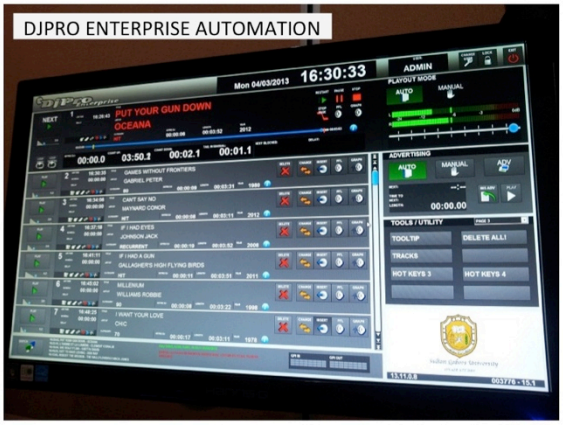


GUEST ON-AIR

PRODUCTION STUDIO

GUEST PRODUCTION

DJPRO ENTERPRISE AUTOMATION




MR. LIGHT

OXYGEN 4 PRODUCTION STUDIO

BROADCAST MICROPHONE